

DETAILED ACTION

1. Claims 1, 3, 5, 6, 8, 10-11, 13, and 15-31 are allowed.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kirk Williams on 10/07/2008.

3. Please amend claims 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 27-31 as follows:

1. (Currently Amended) A method for use in rate controlling an activity, the method comprising:

identifying an approximated inverse rate of a desired rate, a fix-up adjustment value, and a quantum;

maintaining an activity measurement value based on a measure of activity;

maintaining a rate control value based on the activity measurement value and the approximated inverse rate;

applying the fix-up adjustment value once each said quantum to the rate control value to maintain rate accuracy of the activity;

wherein the fix-up adjustment value is a predetermined value for correcting a deviation from the desired rate based on a lack of precision error induced by said use of the approximated inverse rate in maintaining the rate control value; wherein the activity includes sending packets of a stream of packets; and wherein the rate control value is a scheduling value used for determining the relative ordering or timing of a next one or more packets of the stream of packets.

2. (Canceled)

3. (Currently Amended) The method of ~~claim 2~~ claim 1, wherein the activity measurement value is a number of bytes or packets sent.

4. (Canceled)

6. (Currently Amended) ~~A tangible computer-readable medium containing A storage device storing~~ computer-executable instructions ~~for performing~~ to perform steps for rate controlling an activity, said steps comprising:

identifying an approximated inverse rate, a fix-up adjustment value, and a quantum;

maintaining an activity measurement value based on a measure of activity;

maintaining a rate control value based on the activity measurement value and the approximated inverse rate;

applying the fix-up adjustment value once each said quantum to the rate control value to maintain rate accuracy of the activity;

wherein the fix-up adjustment value is a predetermined value for correcting a deviation from the desired rate based on a lack of precision error induced by said use of the approximated inverse rate in maintaining the rate control value; wherein the activity includes sending packets of a stream of packets; and wherein the rate control value is a scheduling value used for determining the relative ordering or timing of a next one or more packets of the stream of packets.

7. (Canceled)

8. (Currently Amended) ~~The computer-readable medium of claim 7~~ The storage device of claim 6, wherein the activity measurement value is a number of bytes or packets sent.

9. (Canceled)

10. (Currently Amended) ~~The computer-readable medium~~ The storage device of claim 6, wherein said applying the fix-up adjustment value once each quantum to the rate control value includes dithering the rate control value to either round-up or not to round-up the rate control value based on a random number.

11. (Currently Amended) An apparatus for use in rate controlling an activity, the apparatus comprising:

means for identifying an approximated inverse rate, a fix-up adjustment value, and a quantum;

means for maintaining an activity measurement value based on a measure of activity;

means for maintaining a rate control value based on the activity measurement value and the approximated inverse rate;

means for applying the fix-up adjustment value once each said quantum to the rate control value to maintain rate accuracy of the activity;

wherein the fix-up adjustment value is a predetermined value for correcting a deviation from the desired rate based on a lack of precision error induced by said use of the approximated inverse rate in maintaining the rate control value; wherein the activity includes sending packets of a stream of packets; and wherein the rate control value is a scheduling value used for determining the relative ordering or timing of a next one or more packets of the stream of packets.

12. (Canceled)

13. (Currently Amended) The apparatus of ~~claim 42~~ claim 11, wherein the activity measurement value is a number of bytes or packets sent.

14. (Canceled)

27. (Currently Amended) ~~A tangible computer-readable medium containing A~~
storage device storing computer-executable instructions ~~for performing~~ to perform
steps for use in scheduling packets, said steps comprising:

- identifying in a current slot a scheduling item corresponding to a packet;
- identifying an approximated inverse rate of a desired rate, a fix-up adjustment value, and a quantum value corresponding to the scheduling item;
- identifying a last adjusted slot for the scheduling item;
- adjusting a bytes sent value based on a number of bytes of the packet to identify a new bytes sent value; and

- in response to identifying that the bytes sent value is greater than or equal to a quantum value corresponding to the scheduling item: (a) identifying a new last adjusted slot for the scheduling item, said identifying the new last adjusted slot including summing a product of the approximated inverse rate and the quantum value, the fix-up adjustment value, and the last adjusted slot; and (b) determining a next slot for the scheduling item, said determining the next slot including adding the product of the approximated inverse rate and the new bytes sent value to the new last adjusted slot;

- wherein the fix-up adjustment value is a predetermined value for correcting a deviation from the desired rate based on a lack of precision error induced by said use of the approximated inverse rate in said scheduling of packets.

28. (Currently Amended) ~~The computer-readable medium~~ The storage device of claim 27, wherein said identifying the last adjusted slot for the scheduling item includes subtracting the product of the approximated inverse rate and the bytes sent value from the current slot.

29. (Currently Amended) ~~The computer-readable medium~~ The storage device of claim 27, wherein the fix-up adjustment value is determined based on the error induced by the approximated inverse rate during a quantum corresponding to the scheduling item.

30. (Currently Amended) ~~The computer-readable medium~~ The storage device claim 27, comprising: in response to identifying that the bytes sent value is less than a quantum value corresponding to the scheduling item, determining the next slot including adding the product of the approximated inverse rate and the new bytes sent value to the last adjusted slot.

31. (Currently Amended) ~~The computer-readable medium~~ The storage device claim 27, wherein said identifying the new last adjusted slot for the scheduling item includes dithering the new last adjusted slot to either round-up or not to round-up the new last adjusted slot based on a random number.

4. The following is an examiner's statement of reasons for allowance:

The examiner believe that considering the two apparatus claim sets (i.e., independent claim 11 and dependent claims 13 and 15, and independent claim 21 and dependent claims 22-26) to be pure software would NOT be a proper construction of thereof. Additionally, FIGs. 4A and 4B illustrate various hardware configurations, albeit, that may be configured using software/firmware, etc. But software/firmware etc. in such a scenario would only be a partial means for doing the recited step or function, and that a proper claim construction would be, for example, the hardware configured to perform the recited step or function.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMAD A. SIDDIQI whose telephone number is (571)272-3976. The examiner can normally be reached on Monday -Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nathan J. Flynn/
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